INVESTIGATION OF REACTIVE BLACK 5 (RB5) ADSORPTION CONDITIONS ONTO LEONARDITE

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Synthetic dyes are the major sources of environmental pollution. The pollution can cause severe damage to human beings, such as dysfunction of the kidneys, reproductive system, liver, and brain and central nervous system [1]. To minimize contamination of the various conventional methods are used. Adsorption is expressed as an alternative to these methods, which is lower cost and more feasible.

Leonardite is a low-rank coal with significant amounts of humic materials, mainly humic acids. It derives either from lignite that has undergone oxidation during surface exposure or it represents sediments enriched in humic substance which has a complex in properties from carboxylic and hydroxylic sites of functional groups in humic substances and various inorganic minerals [2]. Leonardite is an excellent adsorbent of heavy metals and organic compounds. The low cost and availability of leonardite make it a promising candidate for pollution remediation in both soil and groundwater [3].

In this study, the effect of various experimental parameters was investigated using a batch adsorption technique. In this way, the adsorption isotherm, pH and adsorbent dosage effects upon Reactive Black 5 (RB5) adsorption onto leonardite were examined. Acidic pH was favorable for the adsorption of the dye. The Langmuir and Freundlich adsorption models were applied to describe the equilibrium isotherms and the isotherms constant were determined.

KEYWORDS: Adsorption, Reactive Black 5, Leonardite, Isotherm.

REFERENCES:
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